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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/055,560 | 01/22/2002 | Mou-Shiung Lin | MEGP0009USA | 6103 |
| 27765 | 7590 | 07/13/2006 | EXAMINER | |
| NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116 | | | MITCHELL, JAMES M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2813 | |

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/055,560 | Applicant(s) LIN ET AL. | |
| | Examiner James M. Mitchell | Art Unit 2813 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 242-244 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 242-244 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to applicant's amendment filed February 24, 2006.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 242-244 are rejected under 35 U.S.C. 102(e) as being anticipated by Towle et al. (U.S. 2002/0074641).
4. Towle (Fig. 17, 22, 32-34) discloses a chip packaging method comprising joining at least a die (314) having a top surface at a horizontal level to a substrate (302), after joining, depositing metallization/ trace (120) over said horizontal level (e.g. above chip) separated by dielectric layer that form a passive device (capacitance) over the said substrate wherein said passive device has a portion not over said die (e.g. far right of package with wiring separated by insulating layers), horizontal and separating said substrate ("singulated"; Par. 0047); with the passive over the horizontal (i.e. match where top of die is level with top of substrate); and depositing a dielectric (124) over horizontal followed by at least one trace (120); whereby said trace extends to a place under which said die does

Art Unit: 2813

not exist (e.g. wiring connected to outermost balls extends past die); with a first end of wiring (e.g. part of passive component) connected to die and a second end connected to chip package (e.g. part of wiring connected to chip pad, 324 and other end of wiring connected to external contact point e.g. 120).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 242 and 243 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto (U.S.2002/0133943).

Sakamoto¹ (7A,B) discloses a chip packaging method comprising joining at least a die (52A) having a top surface at a horizontal level to a substrate (51A), after joining, depositing metallization/ trace (120) over said horizontal level (e.g. above chip) separated by dielectric layer that form a passive device (capacitance) over the said substrate wherein said passive device has a portion not over said die (e.g. far right of package with wiring separated by insulating layers), horizontal and separating said substrate ("singulated"; Par. 0047); with the passive over the horizontal (i.e. match where top of die is level with top of substrate); and

Art Unit: 2813

depositing a dielectric (124) over horizontal followed by at least one trace (120); whereby said trace extends to a place under which said die does not exist (e.g. wiring connected to outermost balls extends past die);); with passive device having a first end connected down to die (e.g. both chip and capacitor connected to 51B) and a second end connected to chip package (e.g. external contact point, 56C).

7. Sakamoto does not appear to explicitly disclose the order of when the passive device is deposited.

8. However, applicant has not disclosed that the particular claimed sequence is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical. As such forming the passive device after forming the chip would have been obvious, since it has been held the order of performing process steps is prima facie obvious in the absence of new or unexpected results. Ex parte Rubin 128 USPQ (PO BdPatApp 1959), Interactive Gift Express, Inc. v. CompuServe, Inc. 256 F.3d 1323 59 USPQ2d 1401 (Fed. Cir. 2000).

9. Claims 242-244 under 35 U.S.C. 103(a) as being unpatentable over Tabrizi (U.S. 6,867,499).

10. Tabrizi (Fig. 2, 4, 5) discloses a chip packaging method comprising joining at least a die (520) having a top surface at a horizontal level to a substrate (500), after joining, depositing metallization/ trace (560) over said horizontal level (e.g.

¹ The claims are extremely broad that allows for alternative embodiments. For example Dunaway (U.S 5,099,306) or Nuytkens (U.S. 2003/0011049) could have alternatively been used to reject the claims.

Art Unit: 2813

above chip) forming a passive device over the said substrate, horizontal level (e.g. in "redistribution or additional dielectric"; Col. 5, Lines 1-4) layer, and separating said substrate ("form multiple electronic components"; Col. 1, Lines 45-46); with the passive over the horizontal (e.g./ passive in redistribution layer, 560,570); and depositing a dielectric (passivation not labeled covering pad, 540 & 550, 570) over horizontal followed by at least one trace (120); whereby said trace extends to a place under which said die does not exist (e.g. wiring connected to outermost balls, 580 that extends past die).

11. Tabrizi does not appear to explicitly disclose that a portion of the passive component is not over (e.g. understood to mean to left or right) said die.

12. However since placement of a capacitor to either the left or right of die would not modify the operation of the device and applicant has not disclosed that the placement is for any unobvious or critical reasons, the rearrangement of the capacitor would have been obvious since it has been held that the mere shifting of parts without providing modification to the device are obvious. See e.g. In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.); In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice).

Response to Arguments

Art Unit: 2813

13. Applicant's arguments with respect to the amendment of the claims have been considered but are moot in view of the new ground(s) of rejection.

However in an effort to expedite prosecution of the application examiner has addressed some arguments that still may be relevant.

Applicant contends that while admittedly capacitance may be found in the dielectric and wiring as a natural phenomenon that because Towle doesn't teach the capacitance or its specific use that the claimed invention is not anticipated. It is applicant's belief that the claimed capacitor shown in the prior art is "required to be invented or conceived by human."² Examiner respectfully disagrees and the argument found unpersuasive.

First, applicant's has provided no corroborating evidence to support his legal premise on what is required to be prior art, but has relied on mere conjecture, which is inadequate to overcome a prima facie case set out by the examiner. See MP.E.P. 2145 [R-3].

Secondly, it is already well established that prior art need not recognize inherent features in order to anticipate a claim. See M.P.E.P 2112 [R-3]. Most notably it has been held for example in Toro Co. v. Deere & Co., 355 F.3d 1313, 1320, 69 USPQ2d 1584, 1590 (Fed. Cir. 2004)("[T]he fact that a characteristic is a necessary feature or result of a prior-art embodiment (that is itself sufficiently described and enabled) is enough for inherent anticipation, **even if that fact was unknown at the time of the prior invention.**"). [Emphasis mine]. See also Atlas Powder Co. v. Ireco, Inc., 190 F.3d 1342, 1348-49 (Fed. Cir. 1999)

² Recognized by the prior art

Art Unit: 2813

("Because sufficient aeration' was inherent in the prior art, it is irrelevant that the prior art did not recognize the key aspect of [the] invention.... An inherent structure, composition, or function is not necessarily known.") As such, the rejection based on Towle is deemed proper even without Towle's recognition or use of the natural phenomenon.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art discloses most notably in Nuytkens (U.S. 2003/0011049) the use of forming capacitors with a portion not over die.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 2813

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jmm
July 7, 2006

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